2. THE ALTERNATIVES

2.1. PROGRAMMATIC APPROACH

This draft EIS addresses the programmatic issues of developing a new approach to rural landscape management for CVNP. It is intended to help define broad programmatic approaches, policies, and resources affected by the proposed action and assess the environmental impacts of the alternatives at that level. As a programmatic document, it is fully expected that additional environmental compliance at the site level would be required to address potential environmental concerns of issues not yet identified. This process is called 'tiering' and is appropriate "to focus on the issues which are ripe for decision and exclude from consideration issues already decided or not yet ripe" (40 CFR 1508.28). Issues that are not considered 'ripe' may include, for example, the specific outbuildings that may be added to specific properties or farm operating plans detailing specific fields to be used, crops to be planted, and livestock to be grazed. Any site-specific issues not clearly addressed in the draft EIS will be reviewed and addressed when appropriate through subsequent compliance actions as required by federal law and NPS policy.

2.2. METHODOLOGY

To develop the alternatives, the specific components of the rural landscape available for management were first identified and defined. Discrete management goals were developed based on the available rural landscape components. These components and goals are discussed in Section 2.3.

The review of park planning documents, consultation with NPS staff, other agencies and organizations, and public scoping allowed for the development of a number of alternatives that addressed the stated project objectives. All alternatives that met these objectives, fulfilled the purpose for taking action, complied with legal or regulatory mandates of the agency, and were technically and economically feasible are included in the full analysis in this document. All alternatives presented in this draft EIS are subject to the laws and regulations presented in Section 1.3.2 and the NPS requirement to not impair park resources.

Actions common to all the alternatives are described in Section 2.4. The alternatives developed and considered for analysis are then described in Sections 2.5 - 2.8. Each alternative differs in the management emphasis and type of land management practices utilized. Significant management tools to be used in each alternative were identified and grouped by type. Details including who implements the land management actions, who is responsible for maintenance of structures, types of fencing and new construction expected, changes in pesticide uses, and the costs to the agency are described for each alternative. Alternatives that were considered but not analyzed are detailed in Section 2.9.

2.3. DEFINING GOALS FOR THE RURAL LANDSCAPE

The rural landscape in CVNP is composed of agricultural open space and associated structures. Federally-owned lands and structures existing within the boundary of CVNP are the subject of this draft EIS. Earlier inventories of these resources were completed in the 1987 CLR and the 1994 BUP. Since these earlier inventories, additional lands and structures have been acquired, in some cases outside of the earlier park boundary. In some areas, succession has been permitted to occur, reducing the amount of available open land. Buildings have been lost to disuse and decay or demolition. These changes have left CVNP with a slightly different set of rural landscape components than those identified in earlier planning documents.

Currently available open space and structures that may be utilized for rural landscape management activities are briefly described and defined in this section. A full description of how these elements were identified and management goals were defined is found in Appendix D.

2.3.1. Management Goal for Agricultural Open Space

Agricultural open space is defined for this draft EIS to be approximately 1,345 acres of federal land (7 percent). This includes a total of 208 areas ranging in size from 0.009 acre to 75.5 acres in size (mean = 6.4 acres). These areas are comprised primarily of agricultural areas originally identified in the 1987 CLR that remain open today, but includes other currently available open space. The maps at the end of this Chapter depict the locations of these land parcels.

Currently, the NPS manages approximately 740 acres using one of the methods described in Section 1.2.4.5. The remaining 605 acres of available open space are not currently actively managed for rural landscape value. The proposed action would designate these areas for mowing or potential agricultural use.

2.3.2. Management Goal for Structures

A total of 85 properties with 267 structures contribute to the rural landscape in CVNP (Appendix A). The maps at the end of this Chapter depict the locations of these properties. A total of 246 structures are NPS-owned. Some properties (27) that contribute to the rural landscape have an existing use and management method that park managers view as long-term and unchanging, while others are clearly available for modified and new uses. Additionally, life estate and retention properties will eventually be turned over to the park and therefore may be considered for future uses (Appendix D).

Fifty-eight properties consisting of 175 structures are considered to be available for modified management under the proposed action using the various methods described in the alternatives. Specifically for Alternative 2, properties were characterized as having high, low, or no potential for becoming part of an active farmstead. Twenty-three

properties were identified as having high farmstead potential while 32 are considered low farmstead potential, and three as no potential. This assessment was largely qualitative based upon location of the structures with respect to available open space, number of outbuildings, historical significance, and proximity to other potential farmsteads. The overall management goal for structures is to protect all structural components of the rural landscape.

2.4. ACTIONS COMMON TO ALL ALTERNATIVES

2.4.1. Project Scope

All alternatives have the same objectives as described in Section 1.3.1. In addition, park goals related to agricultural lands and structures as described in the previous section are consistent for all alternatives. As such, no quantifiable difference in scope exists between the alternatives. The No Action alternative (also referred to as Alternative 1 or 'status quo') in this draft EIS is actually a continuing action that has the same goals as the action alternatives (Alternatives 2-4). However, implicit in Alternative 1 is the assumption that NPS goals for landscape management are not likely to be achieved under the status quo approach. The actual scope for the No Action alternative is therefore not entirely consistent with the other alternatives. A full explanation of Alternative 1 is in Section 2.5.

2.4.2. Policies, Protocols, and Monitoring

Each alternative will conform to all applicable laws, regulations, NPS guidelines, policies and procedures. Park policies specific to rural landscape management and agricultural activities are described in detail in Appendix B. All alternatives will conform to these policies. Monitoring efforts that will take place to ensure compliance with these policies are also described in Appendix B.

It is possible that some actions proposed under various alternatives do not conform entirely to all current applicable laws, regulations, guidelines or policies. However, the NPS must still consider such alternatives if they are otherwise feasible (CEQ "*40 Questions*"; Federal Register 46:18026). Should an alternative be selected that includes elements that conflict with such laws and policies, the NPS will seek and implement the appropriate remedy before taking such actions.

2.4.3. Common Vista Management Actions

In order to minimize and mitigate the effects of changing agricultural land uses on species dependent upon open grassland areas, two large areas will be designated as grassland habitat management areas. These areas are currently open meadows and will be kept open primarily for their habitat values and rural character under all alternatives by mowing or other means. This acreage will not be available for other management

methods. A Habitat Management Plan will be developed to prescribe appropriate clearing schedules and methods that will maximize habitat value.

Two of the largest and most significant existing grassland habitat blocks have been designated for this purpose including the site of the old Richfield Coliseum (75.5 acres) and a large restored area along the Cuyahoga River between the I-271 and I-80 bridges (35.4 acres). The Coliseum site has recently been restored and now provides high quality habitat for several rare or declining grassland bird species.

Additionally, the Howe Meadow (formerly the Special Events Site) area (25 acres), which is currently mowed, will continue to be mowed regardless of the alternative to be implemented. The use of this area as a recreational site will be maintained.

These three areas (~135 acres) will be kept open through vista management methods (i.e. mowing, habitat management) under all alternatives. This total is about the same as the amount of land currently managed through the vista management method (150 acres). See Table 1.2.

2.4.4. Management Methods Available

The alternatives and related impacts are best described as a direct function of the types of management methods that will be employed under each approach. The various methods available to the NPS for managing the rural landscape are discussed in Section 1.2.4.5. However, some similar management methods will be grouped into categories for ease of discussion in the Alternatives section. All long-term leasing methods (HPLP, NHL, and NLR) will be treated as one category as all long-term leasing has now been legally combined under the NLR. All short-term, non-SUP methods (MOU, CA, concession contracts) will be treated as one category because they do not individually or as a group contribute significantly to rural landscape management and changes in their use is not proposed under any alternative.

All methods may be used to some extent under any of the alternatives. Any new methods proposed specifically for an alternative are described in the relevant section. The primary difference between the alternatives is the emphasis of one or more methods over others for achieving the proposed action.

An estimate of how each method may be used under each alternative is presented in Table 2.1. These estimates were made by reviewing the explicit emphasis of each alternative and then reapportioning available landscape components (unused components and those currently used but available for changes in management) accordingly. Such estimates represent the projected final proportion of management methods applied to land and structural components under each alternative after ten years. Structural uses not expected to change were held constant but included on the table (i.e., 71 structures). Only components currently managed by the NPS were included in the table (i.e., agricultural easements and land exchanges were not counted). For Alternative 1 (No Action), the

Table 2.1. Estimated Proportional Use of Management Methods Under Each Alternative

LANDS										
	Current		**Alternative 1**		**Alternative 2**		**Alternative 3**		**Alternative 4**	
	Acres	***%***	***Acres***	***%***	***Acres***	***%***	***Acres***	***%***	***Acres***	***%***
SUP	461	**62**	834	**62**	67	5	67	5	461	**34**
VISTA	150	**20**	269	**20**	135	10	1165	**86**	150	11
LONG	93	13	175	13	1109	**82**	79	6	242	18
SHORT	34	5	67	5	34	3	34	3	34	3
NPF	0	0	0	0	0	0	0	0	458	**34**
Total	*739*	*100*	*1345*	*100*	*1345*	*100*	*1345*	*100*	*1345*	*100*

STRUCTURES										
	Current		**Alternative 1**		**Alternative 2**		**Alternative 3**		**Alternative 4**	
	#	***%***	***#***	***%***	***#***	***%***	***#***	***%***	***#***	***%***
PARK	46	**35**	87	**35**	57	23	46	19	46	19
LONG	38	**29**	72	**29**	150	**61**	38	15	38	15
SUP	20	15	38	15	0	0	10	4	10	4
SHORT	15	12	29	12	23	9	15	6	15	6
SCEN	11	8	20	8	16	7	137	**56**	137	**56**
Total	*130*	*100*	*246*	*100*	*246*	*100*	*246*	*100*	*246*	*100*

Key: LONG - Long-term leasing (HPLP, NHL, NLR); NPF - National Park Service sponsored farming; PARK - Park uses; SCEN - Scene-setters; SHORT - Other short-term agreements (MOU, CA, concessions contracts); SUP - Special Use Permits; VISTA - Vista Management (mowing, habitat management). The management emphasis under each alternative is in **bold.** Estimates are based a set of assumptions (below) and are meant to illustrate management emphasis for the alternatives and how they relate to the current landscape. Changes in 10 percent for any management method would not be considered significant. Acreages and structures have been rounded for consistency in presentation across the table.

Assumptions: Lands - Under all alternatives a minimum of 135 acres are maintained under vista management as described in Section 2.4.3. For Alternative 1, it was assumed that the final proportion of management method use would be same as the current breakdown. For Alternative 2, SUPs were reduced to 5 percent, other short-term agreements were kept at approximately current levels, and remaining lands were assigned to long-term leasing. For Alternative 3, SUPs were reduced to 5 percent, long-term and other short-term methods maintained approximately original acreages, with remaining available lands assigned to vista management. For Alternative 4, long-term leases were assigned a 5 percent increase, other methods remained constant, and the remaining land was assigned to NPS farming. **Structures -** For Alternative 1, it was assumed that the final proportion of management method use would be the same as the current breakdown. For Alternative 2, long-term leasing numbers included the original long-term agreements, all remaining SUPs, and all the high potential farmsteads. An additional six farmsteads averaging 5 structures each were added. Scene-setters and other short-term agreements had a 50 percent increase, with remaining structures assigned to park use. For Alternative 3 and 4, park uses, long-term leases, and short-term agreements were unchanged, and 50 percent of the current SUPs and all unused structures were treated as scene-setters.

numbers reflect the actual current breakdown of management methods, which is assumed to remain constant over time. Changes of up to 10 percent in any management method would not represent a major shift in emphasis.

2.4.5. Rehabilitation and Maintenance of Properties

The NPS will be responsible for the rehabilitation of federally-owned properties contributing to the rural landscape under any alternative. This will assure that NPS standards for historic and non-historic properties are maintained. It is expected that the current average rate of rehabilitation (approximately 3-4 properties/year) is common for all alternatives. Properties will be rehabilitated in order of priority for use. Structures on properties pending rehabilitation will undergo interim stabilization measures and associated lands will be maintained to control succession.

After rehabilitation, major property maintenance issues (e.g., full roof or septic replacement) remain the responsibility of the NPS, except as detailed in specific agreements. Day-to-day maintenance (e.g., mowing, unclogging of drains, painting) may become the responsibility of the particular user if other than the NPS.

2.4.6. Resource Reviews

It is acknowledged that the lands identified in the open space inventory (GIS data) require site-level review before final use areas are assigned. It is very likely that the actual amount of land to be assigned to agricultural uses will decrease. Many open field boundaries are approximate and yet-to-be-assigned protective buffer zones may further limit agricultural use.

Natural and cultural resource managers will closely review all lands and structures within the project scope before they are put into active use or undergo any changes in management method. Natural resource reviews will identify concerns including the presence of NPS monitoring sites, wetlands, rivers and streams, rare, threatened, and endangered species, and special habitats. Cultural resource reviews will identify concerns related to archaeology, historic structures, and cultural landscapes.

Final recommendations on the use of each area, required protective buffer zones, and the need for additional environmental compliance as required by NPS and park policy will be used in determining which lands are actually managed as part of the rural landscape over time. Additional site-level environmental and historic preservation compliance activities may be required.

Additionally, the NPS will use landscape ecology and planning principles to help assign specific agricultural uses across the park given the general constraints of available land, structures, and interested farmers under each alternative over time. The type and location of assigned uses will be considered at a park landscape perspective to minimize additive landscape-level impacts on natural resources and efficiently utilize cultural resources.

These 'ecological design' principles will be applied as the program unfolds over the next 10 years.

2.4.7. New Acquisitions and Unforeseen Circumstances

Lands and structures that contribute to the rural landscape may occasionally come into NPS management through acquisition or the expiration of retentions and life estates. Additionally, some of the 27 properties that contribute to the rural landscape and have an existing use that park managers view as unchanging may become available due to unforeseen circumstances (e.g., the breaking of a long-term lease).

If these areas have not been already assessed in this draft EIS, they will be assessed for natural and cultural values through the assessment methods used currently. Then, depending upon which of the alternatives is implemented, these lands and/or structures would be managed for their best use based on the proportions described in Table 2.1. In other words, all new acquisitions will not be automatically managed with the predominant method of the selected alternative. Site-level environmental and cultural resource compliance requirements will be completed for any new rural landscape components. An amendment to this EIS will be completed if the scale of changes deems this appropriate.

2.5. ALTERNATIVE 1 - NO ACTION

In this alternative, the NPS would continue to manage the rural landscape using the variety of methods currently available. Current methods were described in Section 1.2.4.5. No significant change in the emphasis of how these methods are used in the park would be implemented (Table 2.1). Agricultural fields, structures, and associated curtilage lands would continue to be maintained under current park plans and practices.

2.5.1. Major Emphasis

Currently, the park manages most of the rural landscape lands through SUPs (62 percent) and vista management by mowing (20 percent) (Table 2.1). Structures are managed largely through adaptive park uses (35 percent) and long-term leasing (29 percent). The park mows and maintains the curtilage around structures used for adaptive park uses and leaseholders are responsible for maintaining the curtilage lands included in their leases. Major changes in emphasis are not expected under this alternative. The various management methods will continue to be applied to unmanaged areas and structures opportunistically as needs arise. Due to uncertainty about future levels of management methods, changes of up to 10 percent in any use method will not be considered substantial.

Under Alternative 1 (No Action), farming practices that exist under SUP would likely continue. This includes conventional farming, sustainable farming, and equestrian uses as

described in Section 1.2.4.5 and shown in Table 1.1. Existing long-term use agreements would be maintained including the three sustainable farms leased under the NLR.

A large proportion of the field management activities would continue to be accomplished by farmers under short-term leases. Day-to-day maintenance of farm buildings and curtilage lands would continue to be almost equally split among leaseholders and NPS staff.

The addition of a few more sustainable farms, demonstration farms, or historical farms would not be considered substantive changes in the No Action alternative for the purposes of this draft EIS, as they are not likely to affect more than 10 percent of the lands and structures. Site-level environmental compliance activities would be required for any new farm project.

The use of lands and structures would continue as outlined in earlier plans without changes in the management method emphasis. Little new construction is expected.

Little new fencing is expected beyond those installed on working farms and restored to preserve scenic values. Few SUP farmers currently fence fields, and this pattern is expected to continue, as the incentive to invest in capital improvements remains small. Some areas may be closed to general public access. Appropriate signage will notify the public of such closures. For areas without agricultural activities, fencing that does not contribute specifically to aesthetic value is not expected.

Pesticide use in the park is expected to increase if more land is leased, but the proportion of leased lands treated with pesticides and the type of pesticides used is expected to remain relatively constant. Current pesticide uses are detailed in Table 2.2 – *Pesticide Use on NPS Agricultural Lands - 2001.*

2.5.2. Timeline

An incremental and opportunistic approach to address unused lands and structures will be implemented over the next ten years, subject to the needs of the park and the interest and availability of SUP and long-term lease farmers. It is not clear whether the full implementation of park goals will be realized under this alternative.

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2.5.3. Cost

The expected costs and income associated with Alternative 1 during the first ten years, the second 10 years, and each year thereafter are found in Table 2.3. Costs of $17,597,150, $11,267,800, and $887,530 and incomes of $905,100, $905,100, and $90,510, are expected in those time periods, respectively.

The net cost of this alternative over 20 years is $27,054,750 and will be $797,020 each year thereafter.

Table 2.2 - Pesticide Use on NPS Agricultural Lands - 2001

Under NPS guidelines, all pesticide use in the park must be approved through an application and review process. A summary of pesticide uses for 2001 is found in the table below. Six of 19 SUP farmers (32 percent) applied pesticides, which is typical as many common types of farming (e.g., haying, oats, field corn) usually do not require pesticides. Some farmers have been certified organic in the past or have pledged to farm using more sustainable practices. Biological agents such as Bacillus thuringiensis (B.t.) and milky spore have also been requested and approved for use in previous years for insect control (i.e., grubs). The park does not usually apply pesticides to areas that it manages as agricultural open space.

Crop	Pesticide	Amount	Acreage
Christmas trees	Deer Away®	160 gallons	5.2 acres
Christmas trees	Malathion	36 ounces	1.5 acres
Christmas trees	Dormant oil (Drexel®)	8 gallons	2 acres
Hay	2-4 D Amine	4 pints	38
Sweet Corn	Dual II Magnum ®	122.5 pints	81 acres
Sweet Corn	Larvin®	40 ounces	47 acres
Sweet Corn	RoundUp®	6 quarts	6 acres

(Active ingredients of pesticides: Deer Away® - putrescent egg solids; Dormant oil – paraffinic oil; Dual II Magnum® - s-metolachlor; Larvin® - Thiodicarb, 1,2 Propylene glycol; RoundUp® - glycophosphate, isopropylamine salt).

Table 2.3. Cost/Income Estimates - Alternative 1 (20-Year Model)

Cost/Income Elements	Initial 10-Year Period	Second 10-Year Period	Annual After 20 Years
COSTS			
Structure Rehabilitation			
Full Rehabilitation	$15,297,500	0	0
Scene Setter Rehabilitation	0	0	0
Management/Monitoring Costs			
Wetland Delineations	$161,400	0	0
Vista Management (NPS Mowing)	$215,200	$215,200	$20,480
NPS Farming	0	0	0
Archeology Assessment & Monitoring	$200,000	$100,000	$10,000
Property Maintenance			
NPS Used Structures	$1,108,050	$4,923,600	$492,360
Other Used Structures	$585,000	$3,516,500	$351,650
Scene Setters	$30,000	$120,000	$12,000
Lead Paint Removal Follow-up	0	$2,392,500	0
SUBTOTAL COSTS	$17,597,150	$11,267,800	$887,530
INCOME			
Lease/Permit Revenues			
SUP (Lands) Income	$125,100	$125,100	$12,510
Sustainable Farm Income	0	0	0
Other Long Term Lease Income	$120,000	$120,000	$12,000
Other Short Term Lease Income	$660,000	$660,000	$66,000
SUBTOTAL INCOME	$905,100	$905,100	$90,510
GRAND TOTAL COSTS	$16,692,050	$10,362,700	$797,020
	20-Year Total Costs:	*$27,054,750*	

Notes: Costs are assessed for a 20-year period without discounting. This allows for the assessment of maximum potential revenue stream from all sustainable farms (which have a 10-year growth and revenue model - see Appendix F). Full implementation of all alternatives is assumed. Numbers reflect comparative costs/incomes for the 58 available properties and agricultural lands subject to the proposed action. All costs/revenues for the other contributing properties are not included in the totals and are considered constant for all alternatives. It was assumed that 50 percent of available properties (29) require

2.6. ALTERNATIVE 2 - COUNTRYSIDE INITIATIVE (PREFERRED ALTERNATIVE)

In this alternative, the rural landscape would be managed largely by issuing long-term leases to private individuals for the purpose of conducting sustainable agricultural activities. Under the New Leasing Regulations (NLR), lands and structures would be leased together for agricultural use for periods of up to 60 years. Lessees would be required to farm using practices considered to be more sustainable than conventional. Preferred sustainable agriculture practices are discussed in Appendix E. Other management methods would continue to be used, but less frequently (Table 2.1). Specifically, a lower proportion of SUPs, vista management practices, and park utilization of structures is expected.

2.6.1. Major Emphasis

The Countryside Initiative would focus on issuing long-term leases under the NLR to manage farmstead structures and associated lands jointly. In addition to the three pilot program farmsteads (Vaughn, Leyser, and Parry), approximately 25-30 farms ranging from less than ten acres to more than 100 acres in size would be restored and put into operation over the next ten years at a rate of approximately three per year. It is expected over that time period that the use of long-term leasing to manage lands would increase to approximately 82 percent (Table 2.1) and structures to approximately 61 percent.

The Countryside Initiative would also focus on expanding the limited lived-in landscape and establishing a 'sense of place'. The Cuyahoga Valley was a place of agriculture for over 200 years. Under this alternative, farmers would reside in the valley on a long-term basis, so their constant presence would create a dynamic, working, agricultural landscape. This Initiative avoids setting up an image of a museum-like snap-shot of a certain period of history; rather, it enhances in a very real way the sense that the valley is *living* landscape. Countryside Initiative farmers would also be expected to have a public component to their farming operation to establish that the visiting community is a welcome part of the living, working community in the valley.

A Request for Proposals open to all interested parties on a competitive basis would be conducted annually according to NPS guidelines. Lease details such as terms, rent, rights and responsibilities would conform to the additional guidelines detailed in Appendix F. Each year, farmers would be required to submit annual farm operating plans for NPS approval. The farm operating plans would include details on the use of lands and structures, including but not limited to: new construction, crop and livestock selection, pesticide and fertilizer use, use of wildlife deterrents (netting, visual, and audible methods), water use, buffering of riparian and wetland areas, farming practices, and marketing and outreach programs. Basically, all activities on these farmsteads will require prior NPS approval. Annual farm operating plans will be required to be respectful of the historical context of farmsteads, but will not be held to strict historic techniques as farming practices have evolved over time. To ensure compliance with NPS standards,

NPS staff will not only review farm plans but the staff will also provide technical assistance to farmers during preliminary planning as well as conduct annual site visits to observe and monitor the condition of farmsteads and fields.

Lands and structures under current management may be converted to management under these long-term leases as described in Section 1.2.4.5. Agricultural open space associated with these farmsteads and not currently managed would be cleared by mowing and/or brushhogging in preparation for farming activities over the next decade. Areas and structures not included as part of these farmsteads would be managed using other methods as outlined in earlier park plans.

Most farms under this alternative would grow and sell the kind of food and fiber crops which were grown and sold in the area from the early 19th century through the mid 20th century. For example, all manners of fruit and vegetable production, as well as herbs and flowers would be expected. Grazing for meat production (e.g., beef, lamb, chevon, chicken, turkey) and for small dairies (e.g., cattle, goat, and sheep) would also be expected. Some free-range poultry operations would probably include egg production. Many farms might integrate crop and livestock systems. There would be few rigid categorical prohibitions or exclusions for specific crop or livestock species. Species known to be particularly invasive would not be permitted. Additionally, enterprises based largely on exotic or newly popular livestock, such as bison, deer, elk, ostriches, emus, rheas, llamas, alpacas, miniatures, and equine boarding would not be permitted. However, it is expected that some integrated use of this type of exotic livestock and small levels of equine boarding may occur.

Farmers under long-term leases would accomplish a large proportion of the field management activities. Day-to-day maintenance of farm buildings and the associated curtilage would become largely the responsibility of those lessees as well.

Pesticide use in the park would be expected to increase as more land is put into active economically-based production, but the types of pesticides used are expected to be largely biological (e.g., *Bacillus thuringiensis*, milky spore, beneficial fungi) rather than chemical. The use of cultural practices (e.g., companion planting, crop rotation, manual removal of pests), biological pesticides and controls (e.g., ladybugs, aphid wasps), and NPS integrated pest management practices would be required over chemical uses as outlined in Appendix E.

Changes to the landscape elements are expected as farmsteads are revitalized through long-term leasing or converted from other types of current management methods. Fencing, outbuildings, farm-related structures, bridges, windmills, water wells and farm ponds could be built on leased farmsteads. Fencing is expected to increase and would conform to the guidelines outlined in Appendix G. It is expected that most if not all farmsteads would install fencing of one or more types. A number of farms and farm fields may be closed to general public access. Appropriate signage will notify the public of such closures. All construction or modifications to structures or the landscape would have to be approved by the NPS and might require individual environmental compliance actions.

Farmers would be expected to use the full range of marketing methods now common in sustainable farming. Some farmers might develop *Pick-Your-Own* operations for blueberries, raspberries, strawberries, apples, pumpkins, and so on. Some might establish *Community Supported Agriculture* programs in which shares of each season's production are sold in advance to a number of local families. *Restaurant Supported Agriculture* arrangements would provide dependable outlets for others. Some farmers might maintain a roadside stand, attend weekly farmers markets, deliver direct to customers, or have customers pick up produce at the farm.

2.6.2. Timeline

Approximately three farmsteads would be put back into agriculture annually for 10 years. Increased clearing of fields and mowing would be implemented over the next two years to maintain open space for upcoming lease offerings.

2.6.3. Cost

The expected costs and income associated with Alternative 2 during the first ten years, the second 10 years, and each year thereafter are found in Table 2.4. Costs of $17,380,135, $10,900,770, and $850,827 and incomes of $1,583,550, $4,369,050, and $481,025 are expected in those time periods, respectively.

The net cost of this alternative over 20 years is $22,328,305 and will be $369,822 each year thereafter.

Table 2.4. Cost/Income Estimates - Alternative 2 (20-Year Model)

Cost/Income Elements	Initial 10-Year Period	Second 10-Year Period	Annual After 20 Years
COSTS			
Structure Rehabilitation			
Full Rehabilitation	$15,297,500	0	0
Scene Setter Rehabilitation	0	0	0
Management/Monitoring Costs			
Wetland Delineations	$181,500	0	0
Vista Management (NPS Mowing)	$108,000	$108,000	$10,800
NPS Farming	0	0	0
Archeology Assessment & Monitoring	$200,000	$100,000	$10,000
Property Maintenance			
NPS Used Structures	$775,635	$3,446,520	$344,652
Other Used Structures	$787,500	$4,733,750	$473,375
Scene Setters	$30,000	$120,000	$12,000
Lead Paint Removal Follow-up	0	$2,392,500	0
SUBTOTAL COSTS	$17,380,135	$10,900,770	$850,827
INCOME			
Lease/Permit Revenues			
SUP (Lands) Income	$10,050	$10,050	$1,005
Sustainable Farm Income	$1,423,500	$4,209,000	$465,000
Other Long Term Lease Income	$60,000	$60,000	$6,000
Other Short Term Lease Income	$90,000	$90,000	$9,000
SUBTOTAL INCOME	$1,583,550	$4,369,050	$481,025
GRAND TOTAL COSTS	$15,796,585	$6,531,720	$369,822
20-Year Total Costs:		*$22,328,305*	

Notes: Costs are assessed for a 20-year period without discounting. This allows for the assessment of maximum potential revenue stream from all sustainable farms (which have a 10-year growth and revenue model - see Appendix F). Full implementation of all alternatives is assumed. Numbers reflect comparative costs/incomes for the 58 available properties and agricultural lands subject to the proposed action. All costs/revenues for the other contributing properties are not included in the totals and are considered constant for all alternatives. It was assumed that 50 percent of available properties (29) require rehabilitation.

2.7. ALTERNATIVE 3 - VISTA MANAGEMENT

In this alternative, the NPS would manage the rural landscape primarily for scenic values. The restoration of currently unused farm structures would primarily be as scene-setters, or secondarily as residential, office, or other non-agricultural use. Lands would be used for non-agricultural purposes. Curtilage lands will be mowed by the park to maintain open space but uses may vary in conjunction with the non-agricultural use of farm structures. Fields will be mowed to be maintained as open space or for wildlife habitat needs. The maintenance of agricultural 'open space' and vistas would be emphasized while minimizing and perhaps eliminating active agriculture on federal land.

Other management methods would continue to be used, but less frequently (Table 2.1). The most significant change would be the gradual conversion of agricultural SUPs and other agricultural activity on park property to mowing and non-agricultural use.

2.7.1. Major Emphasis

It is expected that 86 percent of the lands would be managed by vista management under this alternative. Structures would be managed largely as scene-setters (56 percent). Areas and structures already in use and contributing to the rural landscape under non-agricultural uses would remain in that type of management.

Unused open areas would be managed through periodic mowing to maintain their rural character. Mowing would be done by park staff or by contractors. All agricultural SUPs would convert to mowing after they expire. Areas identified as significant for rare, threatened, endangered, or declining plants and animals would be identified and managed to increase habitat value, usually by adjusting mow frequency and timing.

Structures not currently used or restored would be rehabilitated largely as scene-setters and occasional adaptive park uses as needed. Little new construction is expected.

NPS employees and contractors would accomplish a large proportion of the land management activities. Day-to-day maintenance of farm buildings would become largely the responsibility of NPS staff as well.

Little new fencing would be expected beyond those installed on working farms and those restored to preserve scenic values. Fencing may be removed to facilitate easier mowing. In areas without agricultural activities, fencing that would not contribute to aesthetic value would not be required.

Pesticide use in the park would be expected to decrease as land is taken out of agricultural use.

2.7.2. Timeline

Increased clearing of fields and mowing would be implemented over the next two years with the conversion of most agricultural SUPs occurring within the next three to five years. Other long-term agreements would be converted to non-agricultural uses, as they become available. Used structures would be converted to non-agricultural uses when applicable. Unused structures would be rehabilitated as scene-setters over the next 10 years.

2.7.3. Cost

The expected costs and income associated with Alternative 3 during the first ten years, the second 10 years, and each year thereafter are found in Table 2.5. Costs of $12,085,225, $9,063,550, and $667,105 and incomes of $280,050, $280,050, and $28,005 are expected in those time periods, respectively.

The net cost of this alternative over 20 years is $20,588,675 and will be $639,100 each year thereafter.

Table 2.5. Cost/Income Estimates - Alternative 3 (20-Year Model)

Cost/Income Elements	Initial 10-Year Period	Second 10-Year Period	Annual Costs After 20 Years
COSTS			
Structure Rehabilitation			
Full Rehabilitation	0	0	0
Scene Setter Rehabilitation	$9,839,700	0	0
Management/Monitoring Costs			
Wetland Delineations	$27,000	0	0
Vista Management (NPS Mowing)	$932,000	$932,200	$93,200
NPS Farming	0	0	0
Archeology Assessment & Monitoring	$20,000	$20,000	$2,000
Property Maintenance			
NPS Used Structures	$549,000	$2,461,800	$246,180
Other Used Structures	$202,500	$1,217,250	$121,725
Scene Setters	$510,000	$2,040,000	$204,000
Lead Paint Removal Follow-up	0	$2,392,500	0
SUBTOTAL COSTS	$12,085,225	$9,063,550	$667,105
INCOME			
Lease/Permit Revenues			
SUP (Lands) Income	$10,050	$10,050	$1,005
Sustainable Farm Income	0	0	0
Other Long Term Lease Income	$60,000	$60,000	$6,000
Other Short Term Lease Income	$210,000	$210,000	$21,000
SUBTOTAL INCOME	$280,050	$280,050	$28,005
GRAND TOTAL COSTS	$11,805,175	$8,783,500	$639,100
	20-Year Total Costs:	*$20,588,675*	

Notes: Costs are assessed for a 20-year period without discounting. This allows for the assessment of maximum potential revenue stream from all sustainable farms (which have a 10-year growth and revenue model - see Appendix F). Full implementation of all alternatives is assumed. Numbers reflect comparative costs/incomes for the 58 available properties and agricultural lands subject to the proposed action. All costs/revenues for the other contributing properties are not included in the totals and are considered constant for all alternatives. It was assumed that 50 percent of available properties (29) require rehabilitation.

2.8. ALTERNATIVE 4 - NPS FARMING

In this alternative, the NPS would manage the rural landscape primarily by hiring employees or contractors to implement a network of farmed areas as directed by the NPS to give the appearance of active farming in the park. Under this option, proposed fields not currently in agricultural use would be put into agricultural use. Unused structures would be rehabilitated largely as scene-setters or some would be used to support NPS farming activities. Curtilage lands around these structures would be mowed and possibly used to support farming. A farming program directed by the NPS could also include a few farms demonstrating various themes such as sustainability and farming practices of specific historical eras. This alternative seeks to preserve not only the open space and vistas associated with agricultural areas, but also the agricultural activities associated with those areas.

Other management methods would continue to be used, but less frequently (Table 2.1). The most significant change would be the gradual conversion of vista management actions (i.e., mowing) to NPS farming. Agricultural SUPs and other agricultural activity on park property would continue whenever such opportunities presented themselves. Basically, the NPS would fill any gaps in agricultural activity on rural lands.

2.8.1. Major Emphasis

It is expected that 34 percent of fields would be managed by NPS farming under this alternative with another 34 percent remaining under agricultural SUPs. Structures would be managed largely as scene-setters (56 percent) with the surrounding curtilage being mowed. Areas and structures already in use and contributing to the rural landscape would remain in that type of management.

Unused open areas would be managed by farming (i.e., planting crops, haying) to reestablish or maintain their rural character. Farming would primarily be done by park staff or by off-site contractors, although cooperative agreements and concession contracts could be used occasionally. The emphasis would be on the activities relating to farming - plowing, sowing, and harvesting. Some limited grazing of livestock could occur on a small scale when directly associated with demonstration or historical farms. Little emphasis on crop protection or production would be made (i.e., little new fencing or pesticide use), as crops are not intended for sale. Harvested crops would be discarded or in many cases left unharvested. Agricultural SUPs would continue and possibly expand. Long-term agreements to farm may also expand.

Structures not currently used or restored would be rehabilitated largely as scene-setters and to support NPS farming activities. Occasionally, structures might also be adapted for park uses. Curtilage lands would be primarily mowed and sometimes used to support NPS farming activities or other park uses. Little new construction would be expected.

NPS employees and contractors would accomplish a large proportion of the land management activities. Day-to-day maintenance of farm buildings would become largely the responsibility of NPS staff as well.

Little new fencing would be expected beyond those installed on working farms and those restored to preserve scenic values. Fencing may be removed to facilitate easier NPS farming. Since crops would not be for sale, fencing that would not contribute to aesthetic value would not be required, except for limited use at demonstration or historical farms.

Pesticide use in the park would be expected to decrease since the goal of NPS would not be to protect crop yields.

2.8.2. Timeline

Increased clearing of fields and mowing would be implemented over the next two years with the eventual conversion of most areas (except those kept open for habitat management reasons) to agricultural uses. A few structures would be converted to agricultural uses when applicable. Structures without a current use would be rehabilitated as scene-setters over the next 10 years.

2.8.3. Cost

The expected costs and income associated with Alternative 4 during the first ten years, the second 10 years, and each year thereafter are found in Table 2.6. Costs of $13,497,775, $10,392,550, and $800,005 and incomes of $339,150, $339,150, and $33,915 are expected in those time periods, respectively.

The net cost of this alternative over 20 years is $23,212,025 and will be $766,090 each year thereafter.

Table 2.6. Cost/Income Estimates - Alternative 4 (20-Year Model)

Cost/Income Elements	Initial 10-Year Period	Second 10-Year Period	Annual Costs After 20 Years
COSTS			
Structure Rehabilitation			
Full Rehabilitation	0	0	0
Scene Setter Rehabilitation	$9,839,700	0	0
Management/Monitoring Costs			
Wetland Delineations	$110,550	0	0
Vista Management (NPS Mowing)	$120,000	$120,000	$12,000
NPS Farming	$2,061,000	$2,061,000	$206,100
Archeology Assessment & Monitoring	$100,000	$100,000	$10,000
Property Maintenance			
NPS Used Structures	$554,025	$2,461,800	$246,180
Other Used Structures	$202,500	$1,217,250	$121,725
Scene Setters	$510,000	$2,040,000	$204,000
Lead Paint Removal Follow-up	0	$2,392,500	0
SUBTOTAL COSTS	$13,497,775	$10,392,550	$800,005
INCOME			
Lease/Permit Revenues			
SUP (Lands) Income	$69,150	$69,150	$6,915
Sustainable Farm Income	0	0	0
Other Long Term Lease Income	$60,000	$60,000	$6,000
Other Short Term Lease Income	$210,000	$210,000	$21,000
SUBTOTAL INCOME	$339,150	$339,150	$33,915
GRAND TOTAL COSTS	$13,158,625	$10,053,400	$766,090
	20-Year Total Costs:	*$23,212,025*	

Notes: Costs are assessed for a 20-year period without discounting. This allows for the assessment of maximum potential revenue stream from all sustainable farms (which have a 10-year growth and revenue model - see Appendix F). Full implementation of all alternatives is assumed. Numbers reflect comparative costs/incomes for the 58 available properties and agricultural lands subject to the proposed action. All costs/revenues for the other contributing properties are not included in the totals and are considered constant for all alternatives. It was assumed that 50 percent of available properties (29) require rehabilitation.

2.9. ALTERNATIVES CONSIDERED BUT REJECTED

The following alternatives were raised during scoping but will not be addressed in this draft EIS for the reasons identified.

1. **Allow Succession**. This alternative would allow all potential farmland to revert to a natural state. This alternative would not achieve the park's objectives of maintaining the rural landscape. While this alternative would benefit the natural resources and values of the park, it would be at a large or complete sacrifice to the cultural resources and values and therefore will not be analyzed.
2. **Protect Agriculture Outside Park**. Under this alternative, the NPS would initiate programs to protect farmland outside of federally managed land in the park. Inside the park boundary, the use of easements, acquisitions, or other techniques are options. Beyond park boundaries, advocacy of farmland protection could be initiated but the park has no legislative authority to take further action. None of these alternatives would achieve the park's objectives of maintaining the rural landscape on federal land within CVNP. Promoting farmland protection outside the park may be a worthwhile endeavor on the part of the park, but does not eliminate the need for managing the park-owned cultural resources according to the CVNP mission.
3. **Demonstration Farming.** Under this alternative, the NPS would establish one or several (three to five) farms to demonstrate historical or sustainable agricultural activities. Implementing a few demonstration farms is not a major change in how lands and structures are currently managed park-wide, involving perhaps only 10 percent of the lands and structures in the rural landscape. Demonstration farms could be implemented under Alternatives 1, 2, and 4 but would play a minor role in managing the total rural landscape. This alternative alone would not address the project objectives of managing the entire rural landscape and will therefore not be analyzed separately.
4. **Develop a Few Farms Only.** Under this alternative, the NPS would develop or lease only a few (three to five) active farms on NPS land. Farms might be sustainable, conventional, or historical. As in #3 above, the addition of a few more farms on park land can occur under Alternatives 1, 2 and 4 (indeed, several small farms already exist) and does not constitute a significant change from current practices nor does it address the management of the entire rural landscape. This alternative will not be analyzed separately.
5. **Mandate Organic Farming**. Some members of the public have suggested that the NPS require all agricultural uses to be organic. Organic practices are by definition environmentally friendly and would therefore be ideal for use in a national park setting. However, organic certification is not the only path to or a guarantee of environmental sustainability. Similar approaches to farming (known by names such as biodynamic, biointensive, regenerative, permaculture, nature farming, etc.) also use a number of the concepts and practices commonly called organic. Each such school of thought has its own devotees and defenders – and such farmers often prefer

to practice one of these environmentally-friendly alternative farming systems rather than certified organic production.

Additionally, debates in the farming community on organic standards recently adopted by the USDA (December 2000) continue regarding whether they are excessively strict or unacceptably liberal, and whether the certification and annual costs involved are appropriate. Given these ongoing debates and the realization that organic farming is only one of several approaches that would lead to environmentally benign farming in the park, a strict requirement for organic certification is not considered as an independent alternative. Instead, organic farming is specifically incorporated into Alternative 2 (Countryside Initiative), which strongly encourages organic certification and always requires the use of sustainable farming practices similar to organic methods.

6. **Historical Farming**. In this alternative, the rural landscape would largely be managed by conducting historically accurate agricultural activities across the park. Lessees, contractors, or NPS staff would use farm practices considered to be historically appropriate for each farm based on historic assessments. Though perhaps romantically, nostalgically, or educationally appealing on the surface, as a practical matter this approach is not viable for several reasons. Historical agricultural practices, activities, and crops for farms are often contrary to the long-term resource protection focus of a national park, economically incompatible with modern agriculture, or just impossible to recreate (NPS 1991).

   All approaches to the use of historical farming at a large scale have significant economic limitations. 'Living historical farms' are usually created by museums or parks as stand alone operations (or in conjunction with a historical village). Single living history farms were once more common on NPS lands (e.g., in Gettysburg and Chattanooga National Military Parks). There are only a few instances where three or four historical farms have been created together (e.g., Living History Farms in Iowa, ethnic farms at Old World Wisconsin). Such farms are extremely costly to create and operate, and they always require very large support subsidies. NPS implementation of historically accurate farming practices through contracting or hiring staff would be extremely costly. Private farmers using traditional practices would not compete effectively in today's economy due to limitations in the older technologies and practices. For example, historical fencing is not particularly effective for preventing depredation of crops and livestock or is largely undesirable from a safety standpoint (e.g., barbed-wire fences). The economies, traditions, and needs that supported historical farming in the past no longer exist.

   Large-scale undesirable impacts on the natural environment from non-sustainable historical farming and grazing practices would also be expected under this alternative. Such practices clearly would result in adverse impacts on soil and water, as well as wildlife and their habitats.

   For all of these reasons, this alternative will not be analyzed separately. However, as discussed in #2 and #3 above, a small number of historical farms could be implemented under Alternatives 1, 2 and 4, but this would not be a significant change

from current practices nor does it address the project objective of managing the entire rural landscape. Additionally, modern ecologically friendly practices adapted from historical practices may be used to manage the landscape under Alternatives 1, 2 and 4 to varying degrees.

7. **Habitat Management**. Under this alternative, the NPS would manage and restore open space as plant and wildlife habitat, (e.g., maintain bird/butterfly habitat, prairie restoration) rather than for agriculture use. This approach alone does not address the structural components of the rural landscape. Additionally, in general the NPS does not actively manage habitat for any specific group of plants or animals, except in those cases where species are considered rare, threatened, or declining. It is therefore not entirely appropriate to use this approach as a major emphasis of a rural landscape management program. However, maintaining 'open space' by managing habitat for plants and wildlife is warranted in certain cases.

   Indeed, in this draft EIS some habitat management is prescribed under all of the alternatives. Large blocks of grassland habitats will be preserved in part to minimize the impacts of habitat loss on rare and declining grassland birds and other species. This management tool could play even a more significant role in Alternative 3 (Vista Management). The development of a Habitat Management Plan to address the preservation of CVNP shrub habitats is also a required mitigation measure to help mitigate effects on those habitats from the proposed action.

8. **Restoration of Original Farmland**. In this alternative, the NPS would reestablish farming or vista management practices only on lands identified as primary contributors to the agricultural theme in the 1987 CLR. Profound adverse environmental impacts would likely result from implementing this alternative. This alternative would require clearing approximately 600 acres that are currently unrecognizable as agricultural land as they have mostly grown into closed-canopy forest. Removal of forest would have major and long-term adverse impacts on wildlife and their habitats, ecological processes, and scenic values. Impact levels would clearly be much greater than the other alternatives that are being analyzed in this document. As other relatively more open space is still currently available in the park, it is reasonable to use this existing open space to restore the rural landscape rather than significantly impact many areas that have already returned to forest. Additionally, agriculture covered most of the park at one point in time and as such most areas are culturally significant at least secondarily to agriculture, so this substitution is justified from a cultural value standpoint. This alternative will not be analyzed further.

9. **Public Service Farming**. Under this alternative, the NPS would manage the rural landscape by providing farmsteads to disadvantaged individuals as a public service. No one is expressly prohibited from participating in the rural landscape management alternatives whether as a park employee, contractor, or prospective lessee. Federal laws regulate the various contracting, leasing, and hiring mechanisms that CVNP must follow. Setting preferences for who performs farming under any of the alternatives may serve some legitimate public purpose, but NPS has no legislative authority to set such preferences. Additionally, the same guidelines, regulations, and restrictions apply to all persons involved under any of the alternatives, regardless of

race, creed, or economic status. Therefore, the environmental impacts analyzed in this document are largely independent of the types of individuals implementing the alternatives.

10. **Returning Farmsteads to Original Farmers**. Under this alternative, the NPS would manage the rural landscape by allowing original farming families to return to farms now owned by NPS. This alternative will not be analyzed for the same reasons as #9 above.

2.10. HOW ALTERNATIVES MEET STATED OBJECTIVES

Table 2.7. Summary Comparison of Features of Each Alternative

This table contains a concise comparison of the features of each alternative described in Chapter 2, "The Alternatives."

Feature	ALTERNATIVE 1: NO ACTION	ALTERNATIVE 2: COUNTRYSIDE INITIATIVE	ALTERNATIVE 3: VISTA MANAGEMENT	ALTERNATIVE 4: NPS FARMING
Land Management Emphasis	62% Special Use Permits 20% Vista Management	82% Long-term leasing	86% Vista Management	34% NPS Farming 34% Special Use Permits
Structure Management Emphasis	35% Park Utilization 29% Long-term leasing	61% Long-term leasing	56% Scene-setters	56% Scene-setters
Class of Agricultural Practices	Mostly modern conventional, some sustainable	Mostly sustainable	Little or None	Mostly modern conventional
Work Burden	Largely farmer lessees, NPS mow crew	Primarily farmer lessees	Primarily NPS mow crew	NPS & contract farmers, farmer lessees
Level of New Construction	Low	Moderate	Low or None	Low or None
Level of New Fencing	Low	High	Low or None	Low or None
Pesticide Use & Types	Increase, mainly chemical, some biological	Increase, mainly biological	Decrease	Decrease
Net Costs	First 10 years: $16,692,050 Second 10 Years: $10,362,700 Annually thereafter: $797,020	First 10 years: $15,796,585 Second 10 Years: $6,531,720 Annually thereafter: $369,822	First 10 years: $11,805,175 Second 10 Years: $8,783,500 Annually thereafter: $639,100	First 10 years: $13,158,625 Second 10 Years: $10,053,400 Annually thereafter: $766,090

Table 2.8. Methods Each Alternative Uses to Ensure Each Objective is Met

In each alternative, methods were included to ensure that they met the three stated objectives to some degree. These objectives are discussed in more detail in both the "Objectives and Constraints" section of the "Purpose of and Need for Action" and in the description of each alternative in Chapter 2, "The Alternatives".

Objective	ALTERNATIVE 1: NO ACTION	ALTERNATIVE 2: COUNTRYSIDE INITIATIVE	ALTERNATIVE 3: VISTA MANAGEMENT	ALTERNATIVE 4: NPS FARMING
1. Continue the agricultural tradition – preserve agricultural activity or the appearance thereof	Farming activities will occur on lands; structures and the associated curtilage will be utilized for non-agricultural but compatible uses.	Unified agricultural use of farm structures, associated curtilage and adjacent fields.	Maintain agricultural open space, including farmstead curtilage, through mowing; utilize structures as scene-setters and for park operations.	NPS will farm lands and utilize some structures and associated curtilage areas for farming purposes. Other structures will be used as scene-setters and the curtilage mowed.
2. Preserve scenic values – balance cultural and natural scenic resources	Some agricultural activity on fields; utilization of structures and curtilage for "lived-in" appearance. Minor changes to natural scene.	Significant increase of agricultural activity on fields; structures and curtilage used for related agricultural purposes. Actual "lived-in" landscape. Moderate changes to natural scene.	Preserve open space scene; buildings largely used as scene-setters. Very little farming activity. Minor changes to natural scene.	Appearance of agricultural activity on fields; buildings used as scene-setters or occasionally for farming purposes. Curtilage mowed or occasionally used for farming. Minor changes to natural scene.
3. Use environmentally sound practices – promote responsible stewardship of the land	Requires buffer zones and compliance with integrated pest management guidelines.	Same as Alternative 1 but also emphasizes the implementation of sustainable farming practices and environmentally friendly uses of buffer zones.	Requires buffer zones; significant reduction in farming and related impacts.	Same as Alternative 1.

Table 2.9. Summary Comparison of Impacts of the Alternatives

The following terms are used in this impact summary chart and throughout the environmental impact statement:

- **Negligible**: the impact is localized or at the lower levels of detection
- **Minor**: the impact is localized or slight, but detectable and would not affect overall resources
- **Moderate**: the impact is clearly detectable and could have an appreciable effect on overall resources; has the potential to become major
- **Major**: the impact is highly noticeable and characterized as severe, or if beneficial, has exceptional beneficial effects

Topic	ALTERNATIVE 1: NO ACTION	ALTERNATIVE 2: COUNTRYSIDE INITIATIVE	ALTERNATIVE 3: VISTA MANAGEMENT	ALTERNATIVE 4: NPS FARMING
IMPACTS ON CULTURAL RESOURCES				
Archeological Resources - Impacts of farming practices	Moderate adverse impacts from conventional tilling and negligible to minor adverse impacts from conventional grazing.	Negligible to minor adverse impacts from sustainable no-till farming and rotational livestock grazing.	Negligible impacts.	Same as Alternative 1.
Archeological Resources - Impacts of new construction & fencing	Negligible impacts from little new structures or fencing.	Moderate adverse impacts from moderate amounts of new structures and a large amount of new fencing.	Same as Alternative 1.	Same as Alternatives 1 & 3.
Archeological Resources - Impacts of utility installation	Minor to moderate adverse impacts from utility installation.	Moderate adverse impacts from utility installation.	Negligible to minor adverse impacts from utility installations.	Same as Alternative 3.
Historic Structures – Impacts on historic character	Moderate beneficial effects for rehabilitated structures managed by long-term leases or park uses without required agricultural use. Minor to moderate adverse impacts on structures not readily used.	Major beneficial effects for structures readily rehabilitated and managed by long-term leases requiring agricultural use.	Moderate beneficial effects for structures used as scene-setters and for park operations.	Moderate beneficial effects for structures used as scene-setters and major beneficial effects for structures used for NPS farming activities.

Topic	ALTERNATIVE 1: NO ACTION	ALTERNATIVE 2: COUNTRYSIDE INITIATIVE	ALTERNATIVE 3: VISTA MANAGEMENT	ALTERNATIVE 4: NPS FARMING
IMPACTS ON CULTURAL RESOURCES (continued)				
Historic Structures – Impacts on long-term preservation potential	Major beneficial effects for structures readily rehabilitated and managed by long-term leases and park uses. Minor to moderate adverse impacts for structures not readily used.	Major beneficial effects for structures readily rehabilitated and managed by long-term leases.	Moderate beneficial effects for structures used as scene-setters and major beneficial effects for structures used for park operations.	Moderate beneficial effects for structures used as scene-setters and major beneficial effects for structures used for NPS farming activities.
Cultural Landscapes – Impacts on historic character, land uses at the farm scale	Major beneficial effects for fields used for agricultural purposes. Major adverse impacts if fields remain unused and succession is allowed to set in. Moderate beneficial effects for curtilage lands used for compatible uses associated with structure use.	Major beneficial effects for all lands used for agricultural purposes in conjunction with structures.	Minor beneficial effects from mowing to maintain open fields or as wildlife habitat. Moderate beneficial effects for curtilage lands mowed around scene-setters or used for structures used for park operations.	Major beneficial effects for fields used for agricultural purposes and moderate beneficial effects for curtilage lands mowed around scene-setters or used for NPS farming activities.
Cultural Landscapes - Impacts on historic character, land uses at the park-wide scale	Major beneficial effects for fields used for agricultural purposes. Minor to moderate adverse impacts if land remains unused and succession is allowed to set in. Moderate beneficial effects for curtilage lands used for compatible uses associated with structure use.	Same as at farm scale.	Same as at farm scale.	Same as at farm scale.

Topic	ALTERNATIVE 1: NO ACTION	ALTERNATIVE 2: COUNTRYSIDE INITIATIVE	ALTERNATIVE 3: VISTA MANAGEMENT	ALTERNATIVE 4: NPS FARMING
IMPACTS ON CULTURAL RESOURCES (continued)				
Cultural Landscapes – Impacts on historic character, use of existing structures	Moderate beneficial effects for structures used with no required agricultural purpose. Minor to moderate adverse impacts for unused structures.	Major beneficial effects for structures used for agricultural purposes in conjunction with lands.	Moderate beneficial effects for structures used as scene-setters and for park operations.	Moderate beneficial effects for structures used as scene-setters and for NPS farming activities.
Cultural Landscapes – Impacts on historic character, new construction & fencing	Negligible impacts from little new structures or fencing.	Negligible impacts from moderate amounts of new structures. Moderate beneficial effect from large amounts of new fencing.	Same as Alternative 1.	Same as Alternatives 1 & 3.
IMPACTS ON VEGETATION				
Introduction or spread of non-native invasive plants	Moderate adverse impacts from conventional farming practices.	Minor to moderate adverse impacts from sustainable farming practices (no till, rotational grazing, etc.)	Negligible impacts.	Minor to moderate adverse impacts from conventional and NPS-farming use.
Impacts on vegetation in areas adjacent to managed fields	Moderate adverse impacts from conventional fertilizers, pesticides, and livestock manure flowing into surrounding soil. Negligible impacts when fields are mowed or hayed.	Negligible to minor adverse impacts from sustainable agricultural practices.	Negligible impacts.	Minor to moderate adverse impacts from conventional fertilizers, pesticides, and livestock manure flowing into surrounding soil. Negligible impacts when fields are hayed.

Topic	ALTERNATIVE 1: NO ACTION	ALTERNATIVE 2: COUNTRYSIDE INITIATIVE	ALTERNATIVE 3: VISTA MANAGEMENT	ALTERNATIVE 4: NPS FARMING
IMPACTS ON VEGETATION (continued)				
Indirect impacts on forests from deer	Negligible impacts.	Moderate adverse indirect impacts from increased deer browsing in forests are expected on forest groundcover species diversity, forest regeneration and vertical structure. Local extirpation of some sensitive understory species and a failure of tree regeneration in bottomland forests are possible major adverse impacts.	Negligible impacts.	Negligible impacts.
Impacts on threatened and endangered plant species	No impacts are expected.	No impacts are expected.	No impacts are expected.	No impacts are expected.
Impacts on vegetation from animal movements	Negligible impacts.	Minor adverse impacts on pathways between fields especially during wet periods. Negligible impacts within actual proposed fields.	Negligible impacts.	Negligible impacts.
IMPACTS ON WILDLIFE				
Impacts on white-tailed deer	Minor beneficial effects from increased effects of habitat fragmentation and high quality forage. Minor adverse impacts from harassment or mortality from human-wildlife conflicts.	Moderate to major adverse impacts from a reduction in the amount of prime habitat, increased human-wildlife conflicts and traffic mortality.	Negligible to minor impacts from some loss of agricultural forage. Minor to moderate benefits from decreased conflicts with humans.	Minor to moderate benefits from increased effects of habitat fragmentation and high quality forage. Minor adverse impacts from increased traffic mortality.
Impacts on coyotes	Negligible to minor beneficial effects from a slight increase in hunting areas.	Same impacts as white-tailed deer.	Moderate to major beneficial effects from an increase in hunting areas.	Negligible to minor adverse impacts from a decrease in hunting areas.

Topic	ALTERNATIVE 1: NO ACTION	ALTERNATIVE 2: COUNTRYSIDE INITIATIVE	ALTERNATIVE 3: VISTA MANAGEMENT	ALTERNATIVE 4: NPS FARMING
IMPACTS ON WILDLIFE (continued)				
Impacts on beaver	Minor adverse impacts from trapping, killing, relocation or damage to beaver structures in response to human-wildlife conflicts.	Same as Alternative 1.	Beaver would gain minor to moderate benefits from decreased conflicts with humans.	Negligible impacts.
Impacts on other nuisance wildlife species (e.g., geese, woodchucks, and raccoons)	Minor adverse impacts from harassment or killing of animals in response to human-wildlife conflicts.	Same as Alternative 1.	Negligible impacts.	Negligible impacts.
Impacts on early successional and grassland species	Negligible to minor beneficial effects from the mowing of old field areas and SUP use of lands for hayfields that may increase habitat availability.	Moderate adverse impacts from significant habitat loss in sustainable agriculture areas.	Moderate to major beneficial effects due to the increased amount of habitat available from mowing fields.	Negligible to minor adverse impacts from net loss of habitat.
Impacts on state-listed, rare or declining animal species	State-listed bird species associated with early successional habitats have the same impacts as for grassland species in general.	State-listed bird species associated with early successional and grassland habitats have the same impacts as for grassland species in general. Cumulative impacts from regional habitat losses could exacerbate these effects. Cumulative impacts on forests by deer could affect sensitive forest bird species contributing to possible major adverse impacts and local extirpations.	Same as Alternative 1.	State-listed bird species associated with early successional habitats have the same impacts as for grassland species in general. Cumulative impacts on forests by deer could affect sensitive forest bird species contributing to minor adverse impacts.

Topic	ALTERNATIVE 1: NO ACTION	ALTERNATIVE 2: COUNTRYSIDE INITIATIVE	ALTERNATIVE 3: VISTA MANAGEMENT	ALTERNATIVE 4: NPS FARMING
IMPACTS ON WILDLIFE (continued)				
Impacts on federally-listed threatened and endangered animal species	No impacts are expected.	No impacts are expected.	No impacts are expected.	No impacts are expected.
IMPACTS ON WATER RESOURCES				
Impacts from future development	Negligible to minor adverse impacts from little new construction, few new long-term leases for active farming and requirements to conform to protective buffer plans.	Same as Alternative 1 except impacts may occur more frequently because long-term leasing of farms may require the use of buffers. Negligible to major impacts for individual wetlands. Negligible impacts on entire park watershed and system of wetlands.	Negligible impacts.	Same as Alternative 1.
IMPACTS ON SOCIAL ENVIRONMENT				
Human Health & Safety - Impacts from fencing and guardian animals	Negligible impacts.	Minor to moderate adverse impacts from increased use of electric fencing and guardian animals.	Negligible impacts.	Negligible impacts.
Human Health & Safety – Impacts from deer-vehicle accidents	No impacts are expected.	Minor adverse impacts as loss of habitat and increased fencing affect deer distribution and movement.	No impacts are expected.	Minor adverse impacts from an increase in deer populations.

Topic	ALTERNATIVE 1: NO ACTION	ALTERNATIVE 2: COUNTRYSIDE INITIATIVE	ALTERNATIVE 3: VISTA MANAGEMENT	ALTERNATIVE 4: NPS FARMING
IMPACTS ON SOCIAL ENVIRONMENT (continued)				
Impacts on humans from nuisance wildlife	Negligible to minor adverse impacts on farmers as a result of increased crop or tree damage and flooding.	Minor to moderate adverse impacts from increased conflicts between residents/farmers and wildlife.	Negligible impacts.	Negligible impacts.
Visitor Use and Experience – Impacts on scenic values	Negligible impacts from a lack of qualitative change in farming appearances in the park.	Moderate beneficial effects for visitors who prefer the historic, rural setting of the park due to increased agricultural activity on working farms. Moderate adverse impacts for visitors who prefer a more natural landscape.	Moderate adverse impacts for visitors who prefer to view agricultural activity, as there will be a significant reduction in farming. Moderate beneficial effects for visitors who prefer a more natural landscape.	Minor beneficial effects for visitors who prefer to view agricultural activity from an increase in farming. Minor adverse impacts for visitors who prefer a more natural landscape.
Visitor Use and Experience – Impacts on recreational activities	Minor beneficial effects from increased wildlife viewing and bird-watching opportunities.	Minor adverse impacts from limited access to park areas as a result of fencing. Moderate beneficial effects from an increase in farm-related activities and programs. Moderate adverse impacts from decreased wildlife viewing and bird-watching opportunities from exclusionary agricultural areas and a reduction in grassland habitats. Cumulative effects of regional habitat losses could exacerbate these impacts.	Moderate beneficial effects from increased wildlife viewing opportunities in mowed areas.	Minor benefits from farm-related educational programs. Minor to moderate beneficial effects from increased wildlife viewing opportunities.

Topic	ALTERNATIVE 1: NO ACTION	ALTERNATIVE 2: COUNTRYSIDE INITIATIVE	ALTERNATIVE 3: VISTA MANAGEMENT	ALTERNATIVE 4: NPS FARMING
IMPACTS ON SOCIAL ENVIRONMENT (continued)				
Local Communities – Impacts on school districts	Negligible impacts. Cumulative community growth could lead to possible adverse impacts on school districts expected depending on district response.	Negligible impacts for all school districts except Woodridge where minor to moderate impacts are expected from additional school children residing in park properties. Cumulative community growth could affect the level of impact expected depending on district response.	Negligible to minor beneficial effects from a reduction of children residing on NPS properties attending local schools.	Same as Alternative 3.
Local Communities – Impacts on local revenue from local income taxes	Negligible to minor beneficial effects from vacant properties being put back into use.	Minor to moderate beneficial effects from additional revenues from economically sustainable farm businesses and uses of vacant properties.	Negligible to minor adverse impacts, as currently occupied buildings are taken out of active uses.	Same as Alternative 3.
Local Communities – Impacts on local farmers and businesses	Minor beneficial effects from the availability of additional lands for farming. Negligible impacts from a few additional park farmers.	Negligible to minor adverse impacts on local farmers that depend on NPS land to operate. Minor adverse impacts on local farmers from competition. Minor beneficial effects from increased visitation and business for farming operations in the park.	Minor to moderate adverse impacts on local farmers that depend on NPS land to operate. Negligible impacts on other local businesses.	Negligible impacts on local farmers that depend on NPS land for business. Negligible to minor beneficial effects to other local farmers from increased visibility of farming activity in the park. Negligible impacts on other local businesses.

2.11. ENVIRONMENTALLY PREFERRED ALTERNATIVE

The Council on Environmental Quality (CEQ) regulations (40 CFR 1505.2) require the identification of the *environmentally preferred alternative* in NEPA documents. The environmentally preferred alternative is the alternative that will promote the national environmental policy as expressed in NEPA's Section 101. This includes alternatives that:

- fulfill the responsibilities of each generation as trustee of the environment for succeeding generations.

- ensure for all Americans safe, healthful, productive, and esthetically and culturally pleasing surroundings.

- attain the widest range of beneficial uses of the environment without degradation, risk of health or safety, or other undesirable and unintended consequences.

- preserve important historic, cultural, and natural aspects of our national heritage and maintain, wherever possible, an environment that supports diversity and variety of individual choice.

- achieve a balance between population and resource use that will permit high standards of living and a wide sharing of life's amenities.

- enhance the quality of renewable resources and approach the maximum attainable recycling of depletable resources.

Ordinarily, this means the alternative that causes the least damage to the biological and physical environment; it also means the alternative which best protects, preserves, and enhances historic, cultural, and natural resources (CEQ "*40 Questions*"; Federal Register 46:18026). When weighing all these parameters together, Alternative 3 is considered to be the environmentally preferred alternative. It should be noted that when identifying the environmentally preferred alternative, economic, recreational and technical issues are not considered.

Under Alternatives 1 and 4, the adverse impacts associated with conventional agricultural uses will largely be compensated for by the maintenance of open, mostly unfenced agricultural lands and hayfields that still provide many benefits to wildlife that depend on them. Overall, only relatively minor adverse impacts are expected on the biological and physical environment from these Alternatives. Alternative 1 would only minimally protect historic and cultural resources, while Alternative 4 provides a higher level of protection and enhancement of those resources from a larger increase in farming in the park.

In contrast, Alternative 2 has the potential to have overall moderate adverse effects on biological and physical resources. This is primarily due to the fact that farming under this alternative is economically-driven and requires farmers to largely exclude wildlife from areas they now use through fencing, guardian animals, and other deterrents. The conversion of high-quality forage areas (i.e., crops such as corn) and habitats (i.e., hayfields) to other, better protected crops will effectively result in a net loss of forage areas and habitat. Additionally, new construction is expected to be highest under this alternative which may have additional adverse effects on the biological and physical environment.

While having the greatest impacts on the biological and physical environment, Alternative 2 is also the only alternative that provides major benefits to the historic and cultural environment through a significant increase in agricultural activity by resident farmers. The establishment of a living and working rural landscape that only this alternative provides has the highest possible value to the parks cultural and historical environment and is the primary reason this alternative is the park's Preferred Alternative.

Under Alternative 3, active agricultural activity is largely eliminated from the park and replaced with relatively innocuous mowing regimes to keep areas open. This alternative actually provides minor to moderate overall benefits to many wildlife species that depend on these habitats. It is the only alternative that actually provides net benefits to natural resources from the removals of many potential environmental stressors and potential new construction actions directly related to agricultural activity. This alternative also provides moderate benefits to the historic and cultural environment, though not nearly as much as Alternatives 2 and 4.

Alternative 3 is therefore considered to be the environmentally preferred alternative in this draft EIS as defined by the CEQ because it causes the least amount of impact on biological and physical resources, and provides at least moderate benefits to the natural, cultural and historical environment of the park.

2.12. DECISION-MAKING FACTORS

As required by NEPA, the selection of an alternative will be based solely on the information gathered and analyzed in this EIS. In full consideration of NPS and park mandates outlined in this document, the benefits and negative impacts on all park resources are compared along with the expected economic costs of each alternative.

However, inherent in this decision-making process are trade-offs between natural and cultural resources. In many cases, actions that provide the most benefit to cultural resources also have the greatest negative effects on natural resources, and the opposite is often true as well. These trade-offs help explain why the park’s Preferred Alternative (which provides the greatest benefit to cultural resources but also negatively affects natural resources) is not the Environmentally Preferred Alternative (which provides minor or moderate benefits to both natural and cultural resources).

2.13. IMPAIRMENT

The action alternatives in this draft EIS were developed to prevent the impairment of park resources and values. During the impact analyses, many actions were taken to reduce the level and types of potential impact or impairment. Special policies and protocols were developed, setbacks to wetlands and riparian zones were prescribed, habitat protection and management actions were adopted, and modifications to the alternatives and scope of proposed agricultural lands and structures were made. Any remaining significant adverse impacts are largely unavoidable, have been minimized when possible, and have been reasonably mitigated. A discussion of the major impact concerns identified in the document and a clarification of why these impacts do not necessarily constitute impairment follows.

Some significant but largely unavoidable natural resource impacts from the proposed action are direct consequences of the conversion of open habitats (i.e., grasslands and shrub areas) to agricultural use. Approximately 1,083 acres of "open fields" (including 740 acres of currently farmed or mowed areas) and 262 acres of "older fields" (those possessing significant shrub/sapling growth) will be cleared of their successional plants and thereafter will be managed to prevent succession, either by mowing or farming. To specifically reduce and mitigate these impacts, two large grassland habitat management areas were designated to preserve the largest and highest quality habitat for rare and declining bird species and other species dependent on that habitat. Similarly, some of the largest existing areas of shrub habitat were preserved and not targeted for agricultural use to minimize impacts on species dependent on those areas. To further mitigate the losses of these habitats, a Habitat Management Plan will be drafted within 5 years to address the long-term maintenance of these open habitats. Impacts on these natural resources are minimized and largely mitigated and are therefore not expected to constitute an impairment of park resources.

By maintaining open space in a largely forested landscape, an additional unavoidable adverse impact of all alternatives is the amplification and maintenance of current forest fragmentation levels and related edge effects. The effects of this action alone would not likely lead to an impairment, but the cumulative effects of continued regional losses and increased fragmentation of forested areas outside of the park could possibly lead to the eventual local extirpation of some sensitive forest interior species. This would constitute a major adverse impact, but is not likely to lead to impairment due to the small number of species involved and the indirect and unavoidable nature of the impact.

A possible indirect consequence of implementing the alternatives is the exacerbation of current deer-related impacts on bottomland forest regeneration processes and sensitive understory species. White-tailed deer populations are at unusually high levels partly due to the availability of alternative forage in agricultural and open habitats. Under Alternatives 1, 3, and 4, small deer population increases are anticipated but are not expected to contribute significantly to these impacts. However, under Alternative 2, deer may be forced to browse more heavily in natural areas when excluded by effective fencing from higher quality forage. While the effects of this action alone would not likely

cause an impairment of park resources or values, they could contribute to impairment if not properly mitigated and bottomland forests are lost as a result of deer foraging more heavily in these areas. Specific mitigation of this potential indirect impact is largely beyond the scope of this draft EIS as the adverse effects of this action are but a small component of a complex regional issue with many contributing factors. However, the park has already initiated early planning steps for a full environmental analysis under NEPA to assess possible management alternatives for reducing deer-related impacts and preventing impairment of park resources and values.

Federal regulations and the specific policies and protocols outlined in this draft EIS will allow the NPS to minimize the risks of impairment and prohibit or suspend any activity that may lead to an impairment of park resources and values.